

## Furlough Information

New furlough information, including an [up-to-date](#) Q&A section, appears on the [furlough Web pages](#) daily.

## Layoff Information

New information on Fermilab layoffs, including an [up-to-date](#) Q&A section, appears on the [layoff Web pages](#) daily.

## Calendar

### Wednesday, April 2

3:30 p.m.

DIRECTOR'S COFFEE  
BREAK - 2nd Flr X-Over  
4 p.m.

[Fermilab Colloquium](#) - One West

Speaker: R. Zhu, California Institute of Technology  
Title: Precision Crystal Calorimeters in High Energy Physics

### Thursday, April 2

11 a.m.

[Theoretical Physics Seminar](#) -

Curia II (NOTE TIME)

Speaker: E. Follana, Ohio State University

Title: Charm Physics on the Lattice with Highly Improved Staggered Quarks

1 p.m.

Physics and Detector Seminar

- West Wing, WH-10NW

Speaker: N. Graf, Stanford

Linear Accelerator Center

Title: Global ILC Simulation Status

2:30 p.m.

[Accelerator Physics and](#)

[Technology Seminar](#) - Curia II

(NOTE TIME & LOCATION)

Speaker: M. Syphers, Fermilab

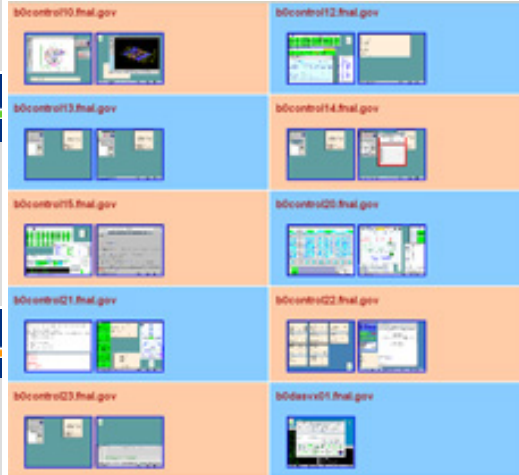
Title: Tevatron Integrated Luminosity: A Tutorial Primer

3:30 p.m.

DIRECTOR'S COFFEE

## Feature

### Screen shot program fosters cross-globe collaboration



CDF collaborators can remotely view 20 online screen images of the 10 control room computers updating regularly.

Although an ocean divides teams of CMS researchers, the CMS collaboration has worked to make researchers forget about that distance.

"If you want to find out what is happening with an experiment, you go to the control room," said Erik Gottschalk, head of the LHC Remote Operations Center at Fermilab. "To work with someone at CERN, it helps to see what they are looking at."

But firewalls at some laboratories prevent network sharing, and commercial screen sharing systems require a timely program download and visual delays of up to two minutes. Letting collaborators view the same control room data screens almost instantly from laboratories in America, Europe, Asia and even from home, became a priority for CD's Kurt Biery.

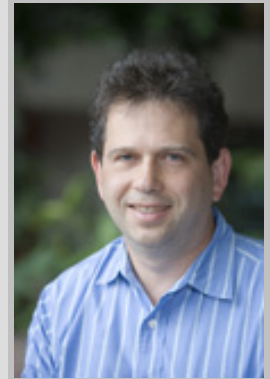
With the help of Kaori Maeshima, who works on CMS and CDF, Biery got around both problems with a new screen snapshot program that captures images of data and detector monitors and publishes the images on outside Web servers. Images broadcast in 5 or 60 second increments. Safeguards prevent outside viewers from changing data on the screens.

## From Center for Particle Astrophysics

### The next big thing?

Scott Dodelson, acting head of the Center for Particle Astrophysics, wrote today's column.

One of the great success stories in science over the last 20 years is the progress that teams of astronomers and particle physicists have made in extracting information about fundamental physics through a wide variety of astronomical observations. These



Scott Dodelson

observations include: spectra of galaxies, counts of galaxies, supernovae, atmospheric and solar neutrinos, spectra of quasars, cosmic microwave background, galaxy shapes, and high-energy cosmic rays. They all have taught us a lot about the fundamental laws of physics that govern the evolution of the universe.

What's next?

Here's one guess: A map of the universe using light with a wavelength of 21 cm, invisible to the human eye. This map would provide a census of the most abundant element in the universe: hydrogen. The 21-cm light--part of the radio spectrum--emerges when an excited state of atomic hydrogen decays to its ground state.

This would not be an ordinary, 2-dimensional map of the sky. Due to the [redshift of light](#) emitted from distant regions of space that are moving away from us, this map would give us information about regions of space at various distances and times. For example, radiation corresponding to this transition in hydrogen emitted from a region of space a billion light years away arrives with a wavelength of 22.5 instead of 21 cm. By measuring at wavelengths of 21 cm and up, we can generate snapshots of the universe at many different periods.

Contrast this with the static map of cosmic microwave background, which shows the

## BREAK - 2nd Flr X-Over THERE WILL BE NO ACCELERATOR PHYSICS AND TECHNOLOGY SEMINAR TODAY

[Click here](#) for NALCAL,  
a weekly calendar with links  
to additional information.

### Weather



**Partly sunny**  
**51°/32°**

[Extended Forecast](#)  
[Weather at Fermilab](#)

### Current Security Status

[Secon Level 3](#)

### Wilson Hall Cafe

#### Wednesday, April 2

- Cajun style lentil soup
- Cajun chicken ranch tilapia w/ jalapeno lime sauce
- Parmesan baked pork chops
- Smoked turkey panini w/ pesto mayo
- Assorted pizza slices
- Chicken alfredo fettucine

[Wilson Hall Cafe Menu](#)

### Chez Leon

#### Wednesday, April 2 Lunch

- Enchilada de pollo
- Ensalada Mexicana
- Pineapple flan

#### Thursday, April 3 Dinner

- French onion soup
- Fillet mignon de pinot noir sauce
- Roasted baby potatoes w/ garlic & rosemary
- Sautéed green beans
- Chocolate soufflé w/ frangelico crème anglais

[Chez Leon Menu](#)

Call x4598 to make your reservation.

### Archives

"It is a very handy, safe way for collaborators around the world to see what we are doing and to help us with our problems," said J.J. Schmidt, CDF operations manager. "It's a great tool when training graduate students. Rather than having them try and describe the problem, both look at the same screen in the control room."

CDF simultaneously posts screen captures from all 20 control room screens. CMS has been experimenting with the system and will share data among all three of its control rooms.

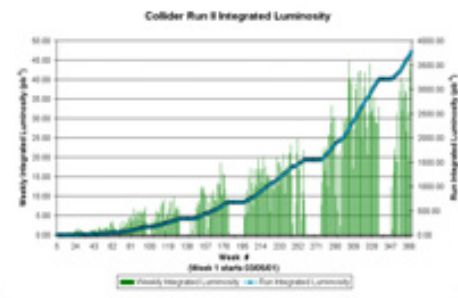
The screen captures don't require additional programming from control room staff as a read-only system would. Eventually, Biery wants to add user tools such as the ability to search archived screens or freeze images for longer viewing. Ideally, collaborators could review the last eight hours of remote operation during meetings.

"We could look at it and discuss it, that bridges the gap that way," Gottschalk said.

--Tona Kunz

### Milestone

## Tevatron tops record luminosity



The plot depicts the steady increase of weekly integrated luminosity over the last seven years. Last week's record-breaking integrated luminosity reached 48 inverse picobarns.

Last week was another good week for the Tevatron, which set a record for integrated luminosity. The March 24-30 record was 48 inverse picobarns, higher than the record of 46.5 inverse picobarns set during the week of March 10.

### From symmetrybreaking

universe when it was 400,000 years old. Measurements of the CMB have garnered two Nobel Prizes and pinned down important cosmological parameters, yet it is a snapshot of the universe at only a single instant. Imagine the power of a survey that shows the universe at various times!

About a half-dozen efforts to explore this idea are currently underway, including a study group here at Fermilab. We have submitted to DOE a proposal to map hydrogen at redshifts of 0.5-2.

If these R&D efforts succeed, we will learn about dark energy from the redshift 0.5-2 maps; about the end of the Dark Ages at redshifts of 6-12; and the primordial perturbations - the very seeds of our creation right after the big bang - by going to even higher redshift.

This could be the next big thing.

### Safety Update

## ES&H weekly report, April 1

This week's safety report, compiled by the Fermilab ES&H section, shows that a minor injury in February 2008 was upgraded from non-reportable to reportable. This increases the total number of reportable cases in FY08 to seven. There were no injuries reported last week. Fermilab has worked 21 days without recordable injury. The full report is available [here](#).

[Safety report archive](#)

### Announcements

#### Blood Drive April 22, 23

Mark your calendars. Heartland Blood Centers will conduct a Fermilab Blood Drive on April 22 and 23 from 8 a.m to 2 p.m. in the Wilson Hall Ground Floor NE Training Room. Appointments can be scheduled on the [Web](#) or by calling Diana at x3771 or Margie at x5680. More information can be found [here](#).

#### NALWO lunch April 9

The next NALWO luncheon is Wednesday, April 9, at noon at Chez Leon. This is a chance to meet other laboratory women, network or just relax over a meal. The cost is \$12. Anyone interested can RSVP by Sunday, April 4, to Marjorie Appel via [e-mail](#) or by phone at (630) 293-9349.

#### SciTech summer camps

[Fermilab Today](#)[Result of the Week](#)[Safety Tip of the Week](#)[ILC NewsLine](#)**Info**

*Fermilab Today*

is online at:

[www.fnal.gov/today/](http://www.fnal.gov/today/)

Send comments and  
suggestions to:

[today@fnal.gov](mailto:today@fnal.gov)

**Mariah Carey vs. Einstein**

On April 15, pop star Mariah Carey will release her new album,  $E=MC^2$ . Here is a quick look at how Carey compares to the master of  $E=MC^2$ , Albert Einstein.

**Carey:** Publishes  $E=MC^2$  at age 38.

**Einstein:** Wrote  $E=MC^2$  in 1905, when he was 26 years old.

**Carey:**  $E=MC^2$  stands for: Emancipation equals Mariah Carey to the second power. (The Emancipation of Mimi was the title of Carey's comeback album in 2005.)

**Einstein:**  $E=MC^2$  stands for: Energy is equivalent to mass. The speed of light squared tells us exactly how much energy a given amount of Einstein action figure mass represents.

**Carey:** Said on MTV that creating the perfume [M by Mariah Carey] and working on her album influenced each other.

**Einstein:** Said that God does not play dice.

[Read more](#)

-- *Kurt Riesselmann*

The SciTech Hands-on Museum offers Science Adventure Camps for children age 6-8 and age 9+. Week-long camps begin on June 23 and run from 9 a.m. to 3 p.m. Fees range from \$200 to \$225 per week. Before- and after-care is available for an extra fee. For more information, visit the [SciTech Web site](#).

**Standard mileage reimbursement rate**

The Internal Revenue Service and the General Services Administration have issued the 2008 standard mileage reimbursement rates as 50.5 cents per mile, effective March 19, 2008.

**Going to CERN?**

Take your camera! Have your photos featured in the Fermilab Remote Operations Center online gallery. Contact [Elizabeth Clements](#) for details.

[Additional Activities](#)